



3Com Baseline Switch 2900 Family

Getting Started Guide

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www.3com.com

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About This Manual

Organization

3Com Baseline Switch 2900 Family Getting Started Guide is organized as follows:

Chapter	Contents
1 Product Overview	Briefly introduces the appearance, system description, as well as the features and applications of the 3Com Baseline Switch 2900 Family.
2 Installation Preparations	Describes the requirements on installation site, the safety recommendations before and during installation, and the required tools.
3 Installing a Switch	Covers the procedures for installing the 3Com Baseline Switch 2900 Family, ground wire connection, power module installation, interface module installation, and so on.
4 Initial Power-On	Helps you get familiar with the basic knowledge of how to boot and configure the 3Com Baseline Switch 2900 Family, including device startup, power-on, and initialization of system files, and so on.
5 Loading Software	Introduces how to load Boot ROM and host software for the 3Com Baseline Switch 2900 Family
6 Maintenance and Troubleshooting	Introduces the problems that might occur during the installation and the booting of the 3Com Baseline Switch 2900 Family and the related solution.




Conventions



The manual uses the following conventions:

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in Boldface. For example, the New User window appears; click OK .
>	Multi-level menus are separated by angle brackets. For example, File > Create > Folder .

Symbols

Convention	Description
 Warning	Means reader be extremely careful. Improper operation may cause bodily injury.
 Caution	Means reader be careful. Improper operation may cause data loss or damage to equipment.
 Highlight	Means an action or information that needs special attention to ensure successful configuration or good performance.

Convention	Description
 Note	Means a complementary description.
 Tip	Means techniques helpful for you to make configuration with ease.

Related Documentation

In addition to this manual, each 3Com Baseline Switch 2900 documentation set includes the following:

Manual	Description
3Com Baseline Switch 2900 Family User Guide	Describe how to configure your 3Com Baseline Switch 2900 Family using the supported protocols

Obtaining Documentation

You can access the most up-to-date 3Com product documentation on the World Wide Web at this URL:
<http://www.3com.com>.

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1 Product Overview

Introduction

The 3Com Baseline Switch 2900 Family are Layer 2 Gigabit Ethernet switches developed by 3Com. They are intelligent manageable switches designed for network environments where high performance, high-density port distribution, and easy installation are required.

With 10/100/1000 Mbps Ethernet interfaces, the 3Com Baseline Switch 2900 Family are mainly deployed at the access layer in enterprise networks requiring Gigabit to the Desktop (GTTD) application and at the distribution layer in metropolitan-area networks (MANs). In the latter deployment, the 3Com Baseline Switch 2900 Family provide GE electrical interfaces for user access or low-end switch convergence in the downlink direction. Whereas, in the uplink direction, they are aggregated to large-capacity Layer 3 switches or switches at the exchange office through their GE interfaces.

[Table 1-1](#) shows the models and system specifications of the 3Com Baseline Switch 2900 Family.

Table 1-1 The 3Com Baseline Switch 2900 Family system specifications

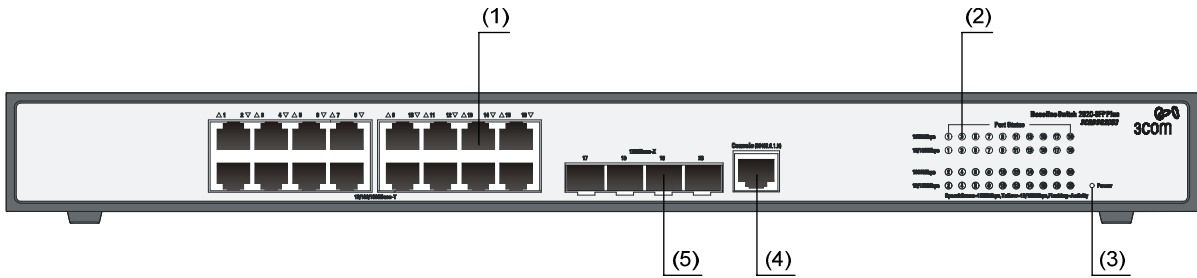
Item	Description				
	3Com Baseline Switch 2920-SFP Plus	3Com Baseline Switch 2928-SFP Plus	3Com Baseline Switch 2952-SFP Plus	3Com Baseline Switch 2928-PWR Plus	3Com Baseline Switch 2928-HPWR Plus
Physical dimensions (H × W × D)	43.6 × 440 × 160 mm (1.72 × 17.32 × 6.30 in.)	43.6 × 440 × 160 mm (1.72 × 17.32 × 6.30 in.)	43.6 × 440 × 260 mm (1.72 × 17.32 × 10.24 in.)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in.)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in.)
Weight	≤ 3 kg (6.61 lb)	≤ 3 kg (6.61 lb)	≤ 5 kg (11.02 lb)	≤ 7 kg (15.43 lb)	≤ 7 kg (15.43 lb)
Console port	1	1	1	1	1
Service ports	16 × 10/100/1000Base-T autosensing Ethernet ports + 4 GE SFP interfaces	24 × 10/100/1000Base-T autosensing Ethernet ports + 4 GE SFP interfaces	48 × 10/100/1000Base-T autosensing Ethernet ports + 4 GE SFP interfaces	24 × 10/100/1000Base-T autosensing Ethernet ports + 4 GE SFP interfaces	24 × 10/100/1000Base-T autosensing Ethernet ports + 4 GE SFP interfaces

Item		Description				
		3Com Baseline Switch 2920-SFP Plus	3Com Baseline Switch 2928-SFP Plus	3Com Baseline Switch 2952-SFP Plus	3Com Baseline Switch 2928-PWR Plus	3Com Baseline Switch 2928-HPWR Plus
Input voltage	AC	Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz Maximum voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz				
	RPS DC	—				Use the external RPS unit provided by 3Com only, with the rated voltage ranging from –52 VDC to –55 VDC
Supported RPS unit		—				RPS1000-A3
Power consumption		11.9W	13.4W	25.7W	25.0W	AC: 45.6W DC: 27.5W
Power consumption (full configuration)		22.4 W	31.5 W	55.4 W	255 W (85 W for system power consumption and 170 W for PoE power consumption)	AC power input: 523 W (158 W for system power consumption and 365 W for PoE power consumption) DC power input: 832 W (92 W for system power consumption and 740 W for PoE power consumption)
Operating temperature		0°C to 45°C (32°F to 113°F)				
Operating humidity (noncondensing)		10% to 90%				

3Com Baseline Switch 2920-SFP Plus

Front Panel

Figure 1-1 3Com Baseline Switch 2920-SFP Plus front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) Port status LED
(3) Power LED (Power)	(4) Console port
(5) 1000Base-X SFP interface	

Note

10/100/1000Base-T autosensing Ethernet ports on the 3Com Baseline Switch 2900 Family are numbered in up-down and left-right order, with the first upper left one being Port 1, the first lower left one being Port 2, the second upper left one being Port 3, and so on.

Rear Panel

Figure 1-2 3Com Baseline Switch 2920-SFP Plus rear panel



(1) AC receptacle	(2) Grounding screw
-------------------	---------------------

Power Supply System

AC power input:

Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz

Input voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz

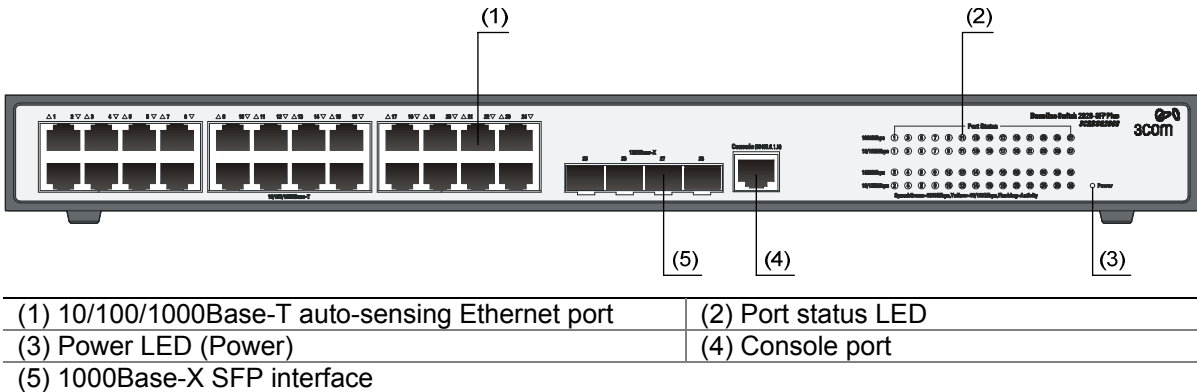
Cooling System

The 3Com Baseline Switch 2920-SFP Plus is equipped with one fan for heat dissipation

3Com Baseline Switch 2928-SFP Plus

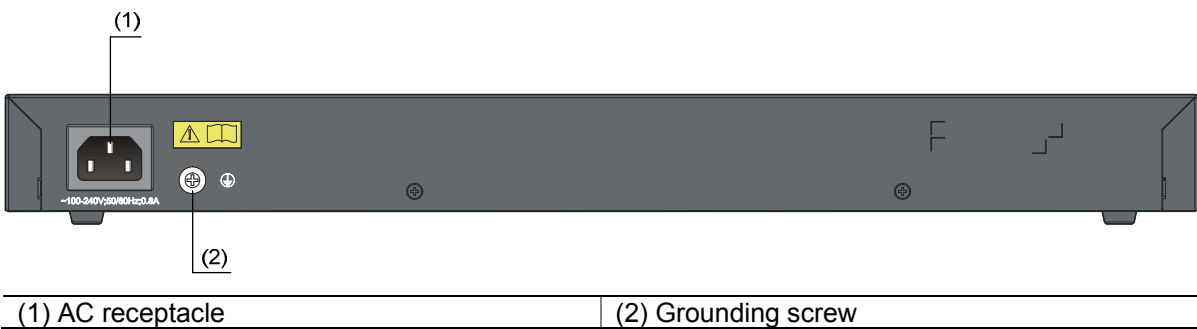
Front Panel

Figure 1-3 3Com Baseline Switch 2928-SFP Plus front panel



Rear Panel

Figure 1-4 3Com Baseline Switch 2928-SFP Plus rear panel



Power Supply System

AC power input:

Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz

Input voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz

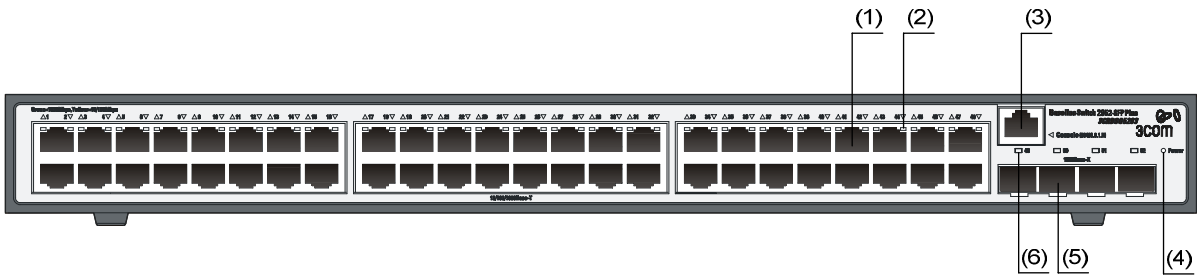
Cooling System

The 3Com Baseline Switch 2928-SFP Plus is equipped with one fan for heat dissipation.

3Com Baseline Switch 2952-SFP Plus

Front Panel

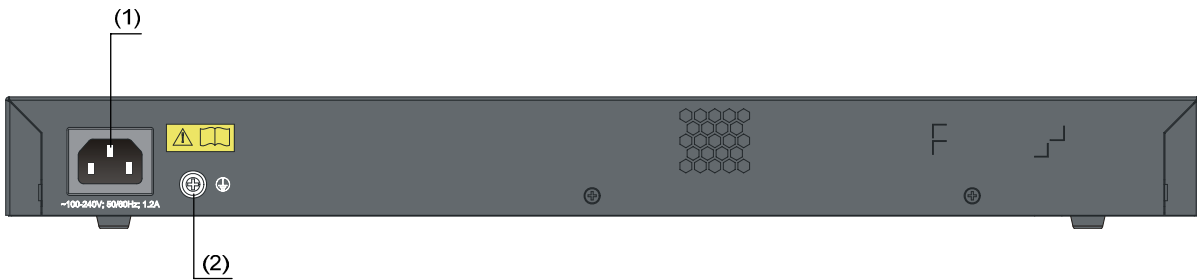
Figure 1-5 3Com Baseline Switch 2952-SFP Plus front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 10/100/1000Base-T auto-sensing Ethernet port status LED
(3) Console port	(4) Power LED (Power)
(5) 1000Base-X SFP interface	(6) 1000Base-X SFP interface status LED

Rear Panel

Figure 1-6 3Com Baseline Switch 2952-SFP Plus rear panel



(1) AC receptacle	(2) Grounding screw
-------------------	---------------------

Power Supply System

AC power input:

Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz

Input voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz

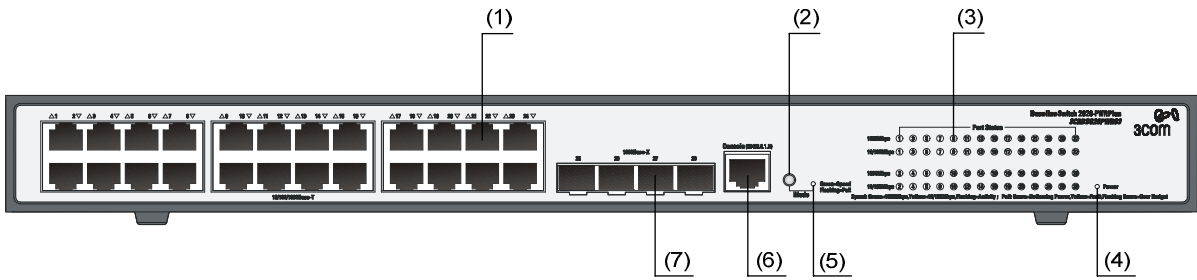
Cooling System

The 3Com Baseline Switch 2952-SFP Plus is equipped with one fan for heat dissipation.

3Com Baseline Switch 2928-PWR Plus

Front Panel

Figure 1-7 3Com Baseline Switch 2928-PWR Plus front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) Port status LED mode switching button
(3) Port status LED	(4) Power LED (Power)
(5) Port mode LED	(6) Console port Port
(7) 1000Base-X SFP interface	

Rear Panel

Figure 1-8 3Com Baseline Switch 2928-PWR Plus rear panel



(1) AC receptacle	(2) Grounding screw
-------------------	---------------------

Power Supply System

AC power input:

Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz

Input voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz

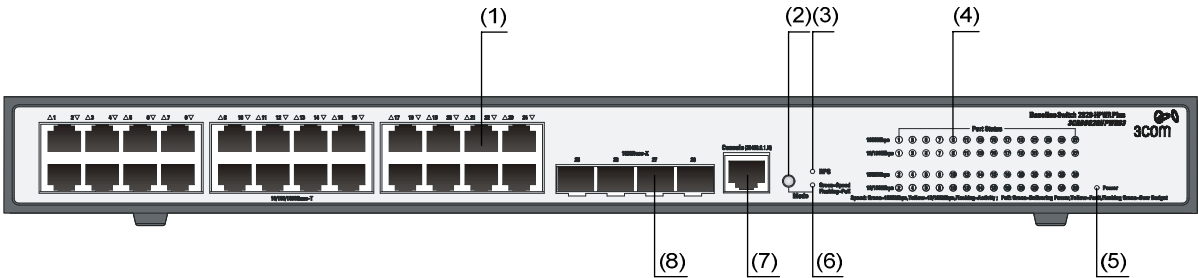
Cooling System

The 3Com Baseline Switch 2928-PWR Plus is equipped with three fans for heat dissipation.

3Com Baseline Switch 2928-HPWR Plus

Front Panel

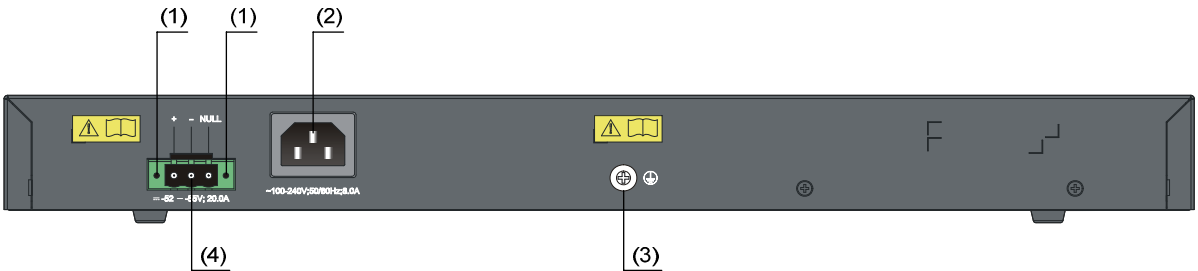
Figure 1-9 3Com Baseline Switch 2928-HPWR Plus front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) Port status LED mode switching button
(3) RPS status LED (RPS)	(4) Port status LED
(5) Power LED (Power)	(6) Port mode LED
(7) Console port	(8) Port 1000Base-X SFP interface

Rear Panel

Figure 1-10 3Com Baseline Switch 2928-HPWR Plus rear panel



(1) Screw hole of the plug	(2) AC receptacle
(3) Grounding screw	(4) DC power receptacle

Power Supply System

The 3Com Baseline Switch 2928-HPWR Plus can adopt AC power input, or DC power input, or both to provide backup

- AC power input:

Rated voltage range: 100 VAC to 240 VAC, 50 Hz or 60 Hz

Input voltage range: 90 VAC to 264 VAC, 47 Hz or 63 Hz

- DC power input

Rated voltage range: -52 VDC to -55 VDC



Caution

Only the RPS recommended by 3Com can be used for the 3Com Baseline Switch 2928-HPWR Plus. The –48 VDC power supply in the equipment room cannot be used directly. Otherwise, the device may be damaged.

Cooling System

The 3Com Baseline Switch 2928-HPWR Plus is equipped with six fans for heat dissipation.

Ports

Console Port

Each 3Com Baseline Switch 2900 Family provides one console port on the front panel. [Table 1-2](#) describes the console port specifications.

Table 1-2 Console port specifications

Item	Specification
Connector type	RJ-45
Compliant standard	EIA/TIA-232
Transmission baud rate	9600 bps to 115200 bps (defaulting to 38400 bps)
Service	<ul style="list-style-type: none">• It can be connected to an ASCII terminal.• It can be connected to a serial port of a local or remote (through a pair of modems) PC running terminal emulation program.

10/100/1000Base-T Ethernet Port

Each 3Com Baseline Switch 2900 Family provides 10/100/1000Base-T Ethernet ports on its front panel. Quantity of Ethernet ports varies with the device model, see [Table 1-1](#) for details.

[Table 1-3](#) describes the specifications of the 10/100/1000Base-T Ethernet ports.

Table 1-3 3Com Baseline Switch 2900 Family 10/100/1000Base-T Ethernet port specifications

Item	Specification
Connector type	RJ-45
Interface speed and operating mode	<ul style="list-style-type: none">• 10 Mbps, full duplex• 100 Mbps, full duplex• 1000 Mbps, full duplex• MDI/MDI-X, auto-sensing
Max transmission distance	100 m (328.1 ft.)
Transmission medium	Category-5 unshielded twisted pair cable
Standard	IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab

1000Base-X SFP Interface

Each 3Com Baseline Switch 2900 Family provides four 1000Base-X SFP interfaces on its front panel. You can select the GE SFP transceivers described in [Table 1-4](#).

Table 1-4 Transceivers supported by the 3Com Baseline Switch 2900 Family 1000Base-X SFP interfaces

Transceiver type	Transceiver	Central wavelength	Connector	Fiber	Max transmission distance
GE SFP transceiver	SFP-GE-SX-MM850-A	850 nm	LC	50/125 μm multimode optical fiber	550 m (0.34 miles)
				62.5/125 μm multimode optical fiber	275 m (0.17 miles)
	SFP-GE-LX-SM1310-A	1310 nm		9/125 μm single mode optical fiber	10 km (6.21 miles)
	SFP-GE-LH40-SM1310				40 km (24.86 miles)
	SFP-GE-LH40-SM1550	1550 nm			40 km (24.86 miles)
	SFP-GE-LH70-SM1550			70 km (43.50 miles)	
	SFP-GE-LX-SM1310-B IDI*	TX: 1310 nm RX: 1490 nm	LC	9/125 μm single mode optical fiber	10 km (6.21 miles)
	SFP-GE-LX-SM1490-B IDI*	TX: 1490 nm RX: 1310 nm			
	SFP-GE-T	—	RJ-45	Twisted pair cable	100 m (328.08 ft)

Note that SFP-GE-LX-SM1310-BIDI and SFP-GE-LX-SM1490-BIDI must be used pairwise.*



Note

The types of SFP transceivers may update with time. For information about transceivers, contact 3Com technical support or marketing staff.

LEDs

Table 1-5 LEDs

LED	Device support	Description
Power LED	All series	See “ Power LED ” on page 1-10 .
RPS status LED	3Com Baseline Switch 2928-HPWR Plus	See “ RPS Status LED ” on page 1-10 .
Port mode LED	3Com Baseline Switch 2928-PWR Plus and 3Com Baseline Switch 2928-HPWR Plus	See “ Port Mode LED ” on page 1-11 .
10/100/1000Base-T auto-sensing Ethernet port status LED	All series	See “ 10/100/1000Base-T Auto-Sensing Ethernet Port Status LED ” on page 1-11 .
1000Base-X SFP interface status LED	All series	See “ 1000Base-X SFP Interface Status LED ” on page 1-13 .

Power LED

The power LED indicates the operation status of the switch.

Table 1-6 Description of the power LED

LED	Status	Description
Power	Solid green	The switch functions normally.
	Blinking green (1 Hz)	The system is performing power-on self test (POST) or downloading software.
	Blinking green (3 Hz)	The POST has failed or another fatal error has been detected.
	Off	The switch has been powered off.

RPS Status LED

The 3Com Baseline Switch 2928-HPWR Plus provides an RPS status LED on its front panel, indicating the working status of the RPS of the switch.

Table 1-7 Description of the RPS status LED

LED	Status	Description
RPS	Solid green	The RPS DC input is normal.
	Off	The RPS unit is not connected or the RPS DC input is abnormal.

Port Mode LED

The port mode LED on the 3Com Baseline Switch 2928-PWR Plus/3Com Baseline Switch 2928-HPWR Plus can display the working status of a port for you to obtain more device information. You can use the port mode switching button to change the status of the port mode LED.

Table 1-8 3Com Baseline Switch 2928-PWR Plus/3Com Baseline Switch 2928-HPWR Plus port mode LED description

LED	Status	Description
Mode	Solid green	Indicates port rate.
	Blinking green (1 Hz)	Indicates port PoE power supply.

10/100/1000Base-T Auto-Sensing Ethernet Port Status LED



Note

- Each port of the 3Com Baseline Switch 2952-SFP Plus has a bi-color LED indicating its status; whereas each port of other models of the 3Com Baseline Switch 2900 Family has two LEDs, with only one in the ON state at a time.
- For each port of the 3Com Baseline Switch 2928-PWR Plus and 3Com Baseline Switch 2928-HPWR Plus, the port mode LED and the status LED together indicate the port operation status.

Table 1-9 10/100/1000Base-T auto-sensing Ethernet port LEDs description

Switch model	Port mode LED	Ethernet port status LED		Meaning
3Com Baseline Switch 2920-SFP Plus 3Com Baseline Switch 2928-SFP Plus	—	Green	On	The port operates at a rate of 1000 Mbps
			Fast blinking	Data is being transmitted or received at 1000 Mbps
			Off	The port is not up or does not operate at 1000 Mbps
		Yellow	On	The port operates at a rate of 10/100 Mbps
			Fast blinking	Data is being transmitted or received at 10/100 Mbps
			Blinking (3 Hz)	The POST has failed
			Off	The port is not up or does not operate at 10/100 Mbps

Switch model	Port mode LED	Ethernet port status LED		Meaning
3Com Baseline Switch 2952-SFP Plus	—	Solid green		The port operates at a rate of 1000 Mbps
		Fast blinking green		Data is transmitted or received at a rate of 1000 Mbps
		Solid yellow		The port operates at a rate of 10/100 Mbps
		Fast blinking yellow		Data is transmitted or received at a rate of 10/100 Mbps
		Off		The port is not up or the POST has failed
3Com Baseline Switch 2928-PWR Plus 3Com Baseline Switch 2928-HPWR Plus	Solid green (rate mode)	Green	On	The port operates at a rate of 1000 Mbps
			Fast blinking	Data is transmitted or received at a rate of 1000 Mbps
			Off	The port is not up or does not operate at 1000 Mbps
		Yellow	On	The port operates at a rate of 10/100 Mbps
			Fast blinking	Data is transmitted or received at a rate of 10/100 Mbps
			Blinking (3 Hz)	The POST has failed
			Off	The port is not up or does not operate at 10/100 Mbps.
	Blinking green (PoE mode)	Green	On	PoE power supply is normal.
			Blinking at 3 Hz	Power consumption of the device attached to the port exceeds the upper limit of the power supply consumption of the port, or the available power of the switch is not enough for power supply of the port.
			Off	No PoE power supply is provided on the port.
		Yellow	On	The device connected to the interface is not a PD device or a PoE failure occurs
			Blinking (3 Hz)	The POST has failed
			Off	No PoE power supply is provided on the port or PoE power supply is normal.

1000Base-X SFP Interface Status LED



Note

For 3Com Baseline Switch 2928-PWR Plus and 3Com Baseline Switch 2928-HPWR Plus, the port mode switching button does not take effect for the 1000Base-X SFP interface LEDs.

Table 1-10 1000Base-X SFP interface status LEDs description

LED	Meaning
Solid green	The port operates at a rate of 1000 Mbps The port is transmitting data at 1000 Mbps
Blinking green	The LED is fast blinking when data is being received on the port.
Off	No link is present on the port

2 Installation Preparations

Safety Precautions

To avoid any device impairment and bodily injury caused by improper use, observe these rules:

- Before cleaning the switch, plug out the power cord of the switch first. Do not clean the switch with wet cloth or liquid.
- Do not place the switch near water or in a damp environment. Prevent water or moisture from entering the switch chassis.
- Do not place the switch on an unstable case or desk. The switch might be damaged severely in case of a fall.
- Ensure proper ventilation of the equipment room and keep the ventilation vents of the switch free of obstruction.
- Connect the yellow-green protection PGND cable before power-on.
- Make sure that the operating voltage is in the range labeled on the power of the switch.
- Do not open the chassis to avoid electrical shocks when the switch is operating or just when the switch is powered off.

Installation Site

The 3Com Baseline Switch 2900 Family must be used indoors. You can mount the switch in a rack or on a workbench, but make sure:

- Adequate clearance is reserved at the air inlet/exhaust vents for ventilation.
- The rack or workbench has a good ventilation system.
- The rack is sturdy enough to support the device and its accessories.
- The rack or workbench is well earthed.

To ensure normal operation and long service life of your switch, install it in an environment that meets the requirements described in the following subsections.

Temperature/Humidity

You must maintain a proper temperature and humidity in the equipment room. Long-term high humidity may lead to bad insulation, electricity leakage, mechanical property changes, and metal corrosion. However, if the relative humidity is too low, captive screws may become loose as the result of contraction of insulation washers and static electricity may be produced in a dry environment to jeopardize the circuits on the device. A high temperature is the most undesirable condition, because it accelerates the aging of insulation materials and thus significantly lowers reliability and service life of the switch.

For the temperature and humidity requirements of different models, refer to [Table 2-1](#) on page [2-2](#).

Cleanness

Dust is a hazard to the operating safety of your device. The dust accumulated on the chassis can be adsorbed by static electricity and result in poor contact of metal connectors or metal contact points.

Especially when the indoor relative humidity is low, electrostatic adsorption is more likely to happen. This can not only shorten the service life of your device but also cause communications failures. The following table lists the dust concentration limit.

Table 2-1 Dust concentration limit in the equipment room

Substance	Concentration limit (particles//m ³)
Dust	$\leq 3 \times 10^4$ (no visible dust on the tabletop over three days)

Note: The dust diameter is greater than or equal to 5 μm .

Besides dust, there are rigorous limits on the content of harmful substances in the air that can accelerate the corrosion and aging of metals, such as chloride, acid, and sulfide in the equipment room. The equipment room must be protected against ingress of harmful gases such as SO₂, H₂S, NH₃, and Cl₂. For specific requirements, see the following table.

Table 2-2 Harmful gas limits in the equipment room

Gas	Maximum concentration (mg/m ³)
SO ₂	0.2
H ₂ S	0.006
NH ₃	0.05
Cl ₂	0.01

Electromagnetic Susceptibility

The operation of your switch can be affected by external interferences, such as conducted emission by capacitance coupling, inductance coupling, electromagnetic wave radiation, and common impedance (including the grounding system) coupling, and leads (power cables, signaling cables and output wires). To eliminate the interferences, pay attention to the following:

- As the AC power system is a TN system, use a single-phase three-wire power socket with a protection earth (PE) to effectively filter interference from the power grid.
- Keep the device far away from radio transmitting stations, radar stations, and high-frequency devices.
- Use electromagnetic shielding, for example, shielded interface cables, when necessary.
- Route interface cables only indoors to prevent signal ports from getting damaged by over-voltage or over-current caused by lightning strikes.

Laser Safety

The 3Com Baseline Switch 2900 Family are Class 1 laser devices.

**Caution**

When an SFP module on the 3Com Baseline Switch 2900 Family is operating, do not stare into the optical port because the laser light emitted from the optical fiber may hurt your eyes.

Installation Tools

- Flat-blade screwdriver
- Phillips screwdriver
- ESD-preventive wrist strap

**Caution**

No installation tools are shipped with the 3Com Baseline Switch 2900 Family.

3 Installing a Switch



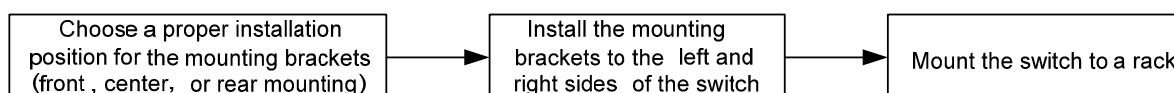
Caution

On a mounting screw of the chassis of the 3Com series switches, there is a seal labeled. You need to keep it intact before asking the agent to maintain the switch. You need to get the permission of the local agent before you can open the chassis. Otherwise, you will be responsible for irreversible damages caused by your operations.

Installing the Switch into a 19-Inch Rack Using Mounting Brackets

The 3Com Baseline Switch 2900 Family is shipped with a pair of mounting brackets to fix and support the switch. [Figure 3-1](#) shows how to install a 3Com Baseline Switch 2900 Family into a 19-inch rack.

Figure 3-1 Install a 3Com Baseline Switch 2900 Family into a 19-inch rack

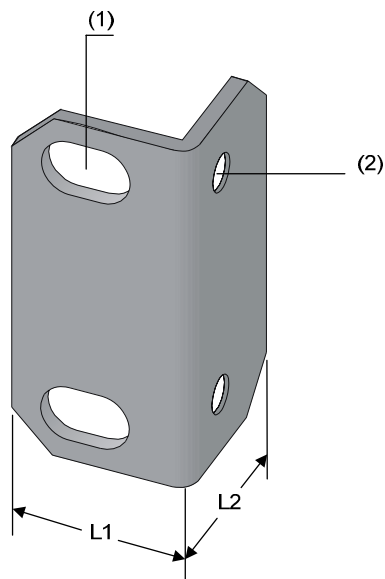


Introduction to Mounting Brackets

Table 3-1 Mounting brackets for the 3Com Baseline Switch 2900 Family

Model	Mounting bracket	Description
3Com Baseline Switch 2920-SFP Plus	Two-holed mounting brackets (standard)	Figure 3-2 shows the appearance.
3Com Baseline Switch 2928-SFP Plus		
3Com Baseline Switch 2952-SFP Plus	Four-holed mounting brackets (standard)	Figure 3-3 shows the appearance.
3Com Baseline Switch 2928-PWR Plus		
3Com Baseline Switch 2928-HPWR Plus		

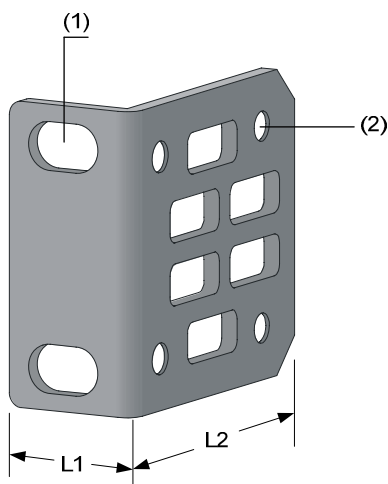
Figure 3-2 Two-holed mounting bracket



(1) Screw hole used to fix the mounting bracket to the rack (with an M6 screw)

(2) Screw hole used to fix the switch to the mounting bracket

Figure 3-3 Four-holed mounting bracket



(1) Screw hole used to fix the mounting bracket to the rack (with an M6 screw)

(2) Screw hole used to fix the switch to the mounting bracket

Attaching the Mounting Brackets to a Switch



Caution

The installation of actual mounting brackets vary with devices.

The mounting brackets can be attached to a switch for center, front, or rear mounting. You can choose a proper position according to the actual requirements. [Table 3-2](#) shows the position support for the 3Com Baseline Switch 2900 Family.

Table 3-2 Description of mounting position support for the 3Com Baseline Switch 2900 Family

Model	Mounting position	Description
3Com Baseline Switch 2920-SFP Plus	Front or rear part of the chassis	See Figure 3-4 , and Figure 3-5 .
3Com Baseline Switch 2928-SFP Plus		
3Com Baseline Switch 2952-SFP Plus	Front or rear part of the chassis	See Figure 3-6 , and Figure 3-8 .
3Com Baseline Switch 2928-PWR Plus	Front, center, or rear part of the chassis	See Figure 3-6 , Figure 3-7 , and Figure 3-8 .
3Com Baseline Switch 2928-HPWR Plus		

Step1 Place the L2 side of a mounting bracket (see [Figure 3-2](#) and [Figure 3-3](#)) to the switch and align the mounting holes of the bracket with the holes of the chassis. See [Figure 3-4](#) and [Figure 3-5](#) when installing a two-holed mounting bracket, and [Figure 3-6](#), [Figure 3-7](#), and [Figure 3-8](#) when installing a four-holed mounting bracket.

Step2 Fasten the screws.

Figure 3-4 Install a two-holed mounting bracket on the chassis (front mounting)

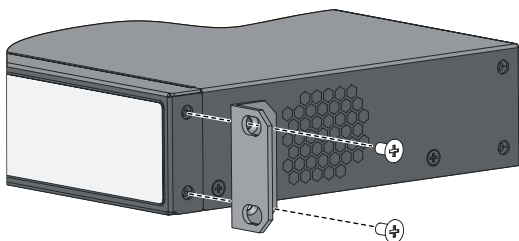


Figure 3-5 Install a two-holed mounting bracket on the chassis (rear mounting)

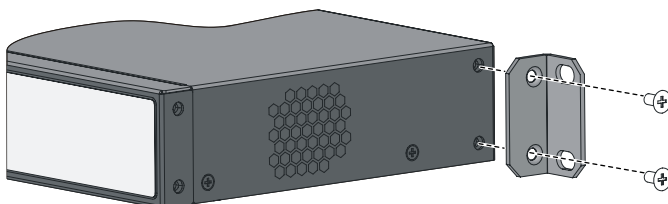


Figure 3-6 Install a four-holed mounting bracket on the chassis (front mounting)

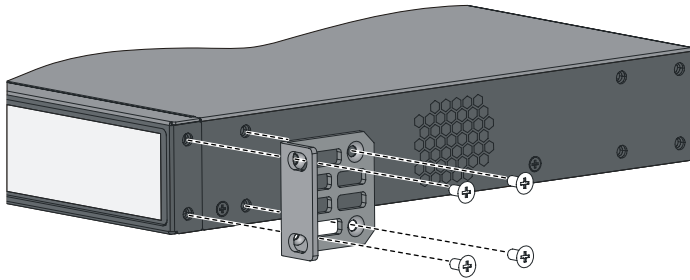


Figure 3-7 Install a four-holed mounting bracket on the chassis (center mounting)

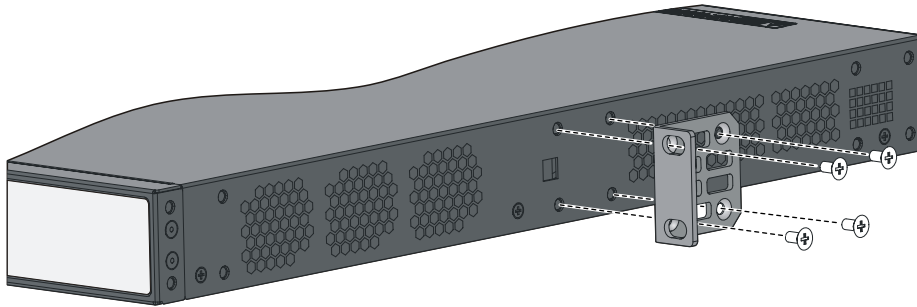
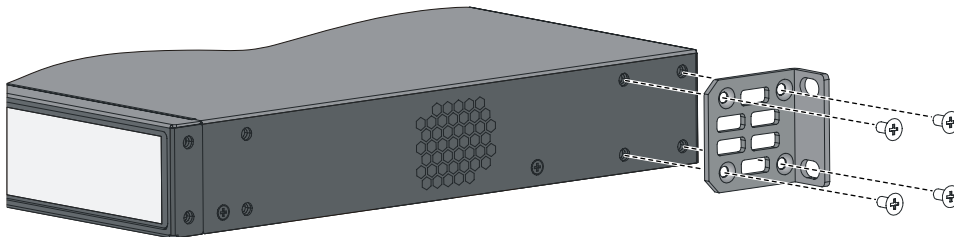


Figure 3-8 Install a four-holed mounting bracket on the chassis (rear mounting)



Mounting the Switch to a Rack

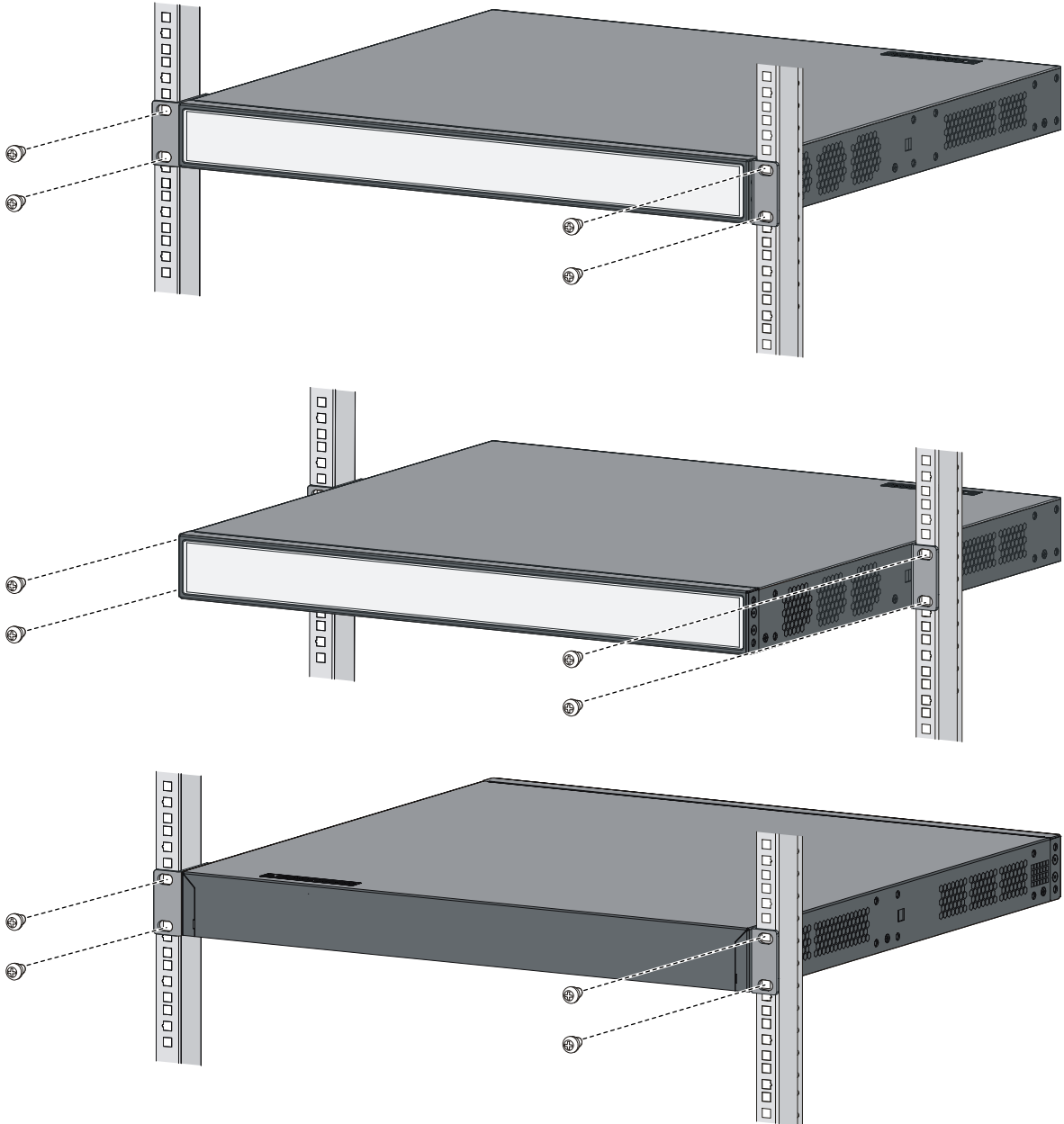
- Step1** Put on an ESD-preventive wrist strap and make sure the rack is well grounded and is firm enough to hold the switch and cables.
- Step2** Attach the mounting brackets to the switch. For details, refer to "[Attaching the Mounting Brackets to a Switch](#)" on page [3-2](#).
- Step3** Hold the bottom of the switch and gently place the switch on the rack to a proper location with one person.
- Step4** Fix the mounting brackets with screws (anti-rust screws prepared by yourself) with another person to install the switch to the rack horizontally.



Caution

If support trays are provided on the rack, you can mount the switch to the rack with mounting brackets and trays. Put the switch on the support tray and slide the switch to an appropriate location. Then fix the mounting brackets.

Figure 3-9 Mount the 3Com Baseline Switch 2928-PWR Plus to a rack



Note

Installation of other 3Com Baseline Switch 2900 Family into a rack is similar to that of the 3Com Baseline Switch 2928-PWR Plus.

Mounting the Switch on a Workbench

In many cases, standard 19-inch cabinets are not available. Therefore, switches are often placed on clean workbenches. To place the switch on a workbench, follow these steps:

Step1 Place the switch with bottom up carefully, and then clean the round holes on the chassis bottom with dry cloth.

Step2 Attach the rubber feet to the four round holes on the chassis bottom.

Step3 Place the switch with upside up on the workbench.

During the operation, you simply need to:

- Make sure that the workbench is flat and sturdy.
- Ensure good ventilation and a space of 10 cm (3.94 in.) around the chassis for heat dissipation.
- Avoid heavy objects on the switch.

Connecting the PGND Cable



Caution

- Correctly connecting the switch PGND cable is crucial to the lightning protection and electromagnetic susceptibility (EMS) of a switch.
 - The power receptacles and grounding terminals in this section are for illustration only.
-

The power input end of the switch is connected with a noise filter, whose central ground is directly connected to the chassis, forming the so-called chassis ground (commonly known as PGND). This chassis ground must be securely connected to the earth so that the faradism and leakage electricity can be safely released to the earth, enhancing the EMS capability of the switch.

When a Grounding Strip is Available

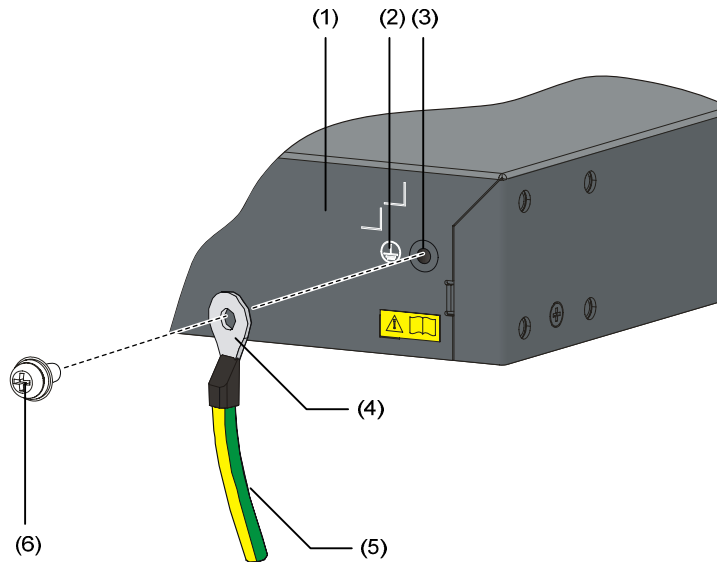
When a grounding strip is available at the installation site, attach one end of the yellow-green PGND cable of the switch to the grounding screw on the grounding strip (the grounding screw and the grounding hole are on the rear panel of the switch and are marked with a grounding sign). To do this, follow these steps:

Step1 Remove the grounding screw from the rear panel of the switch chassis.

Step2 Put the supplied OT terminal of the PGND cable on the grounding screw.

Step3 Fasten the grounding screw, which is attached with the OT terminal of the PGND cable, into the grounding screw hole with a screwdriver.

Figure 3-10 Connect the PGND cable to the grounding hole of switch

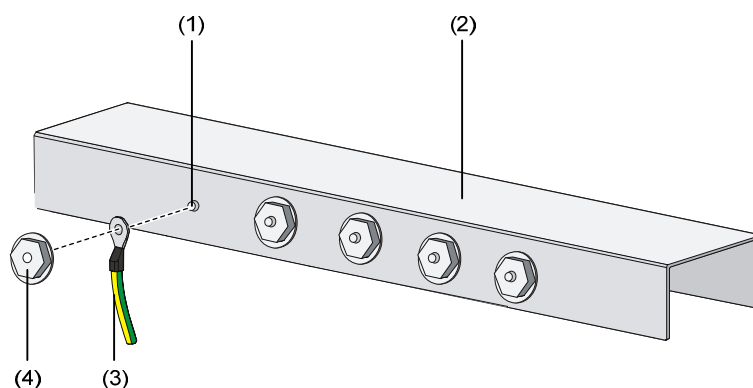


(1) Rear panel of the switch	(2) Grounding sign
(3) Grounding hole	(4) OT terminal
(5) PGND cable	(6) Grounding screw

To attach the other end of the PGND cable to the grounding strip in the equipment room, follow these steps:

- Step1** Cut the PGND cable to a proper length according to the distance between the switch and the grounding strip.
- Step2** Peel 5 mm (0.20 in.) of insulation sheath using a wire stripper, and then insert the naked metal part through the insulation covering into the end of the OT terminal.
- Step3** Secure the metal part of the cable to the OT terminal with a crimper, and then cover it with the insulation covering. Then heat the insulation covering with a blowing machine to let it completely cover the metal part.
- Step4** Connect the OT terminal to the grounding pole of the grounding strip, and then fasten it with a hex nut.

Figure 3-11 Connect the PGND cable to the grounding strip



(1) Grounding post	(2) Grounding strip
(3) PGND cable	(4) Hex nut



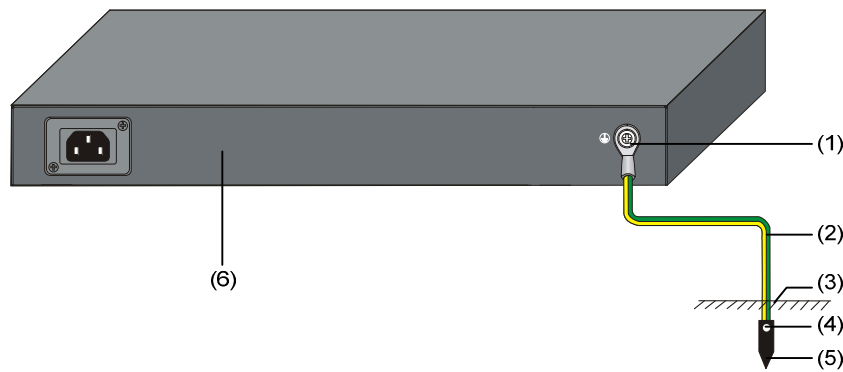
Caution

- The PGND cables supplied with the 3Com Baseline Switch 2900 Family do not provide OT terminals at the ends connecting the grounding strip. You need to prepare proper OT terminals by yourself.
- The fire main and lightning rod of a building are not suitable for grounding the switch. The PGND cable of the switch should be connected to the grounding device for the equipment room.

Where a Grounding Conductor Can be Buried

When there is no grounding strip, but an area with exposed earth is available nearby where a grounding conductor can be buried, hammer a 0.5 m (1.64 ft.) or longer angle iron or steel tube into the earth. The angle iron should have a dimension no less than $50 \times 50 \times 5$ mm (1.97 × 1.97 × 0.20 in.) and the steel tube should have a wall thickness no less than 3.5 mm (0.14 in.) and be zinc-coated. Weld the yellow-green PGND cable to the angle iron or steel tube and treat the joint for corrosion protection.

Figure 3-12 Ground the switch by burying the grounding conductor into the earth



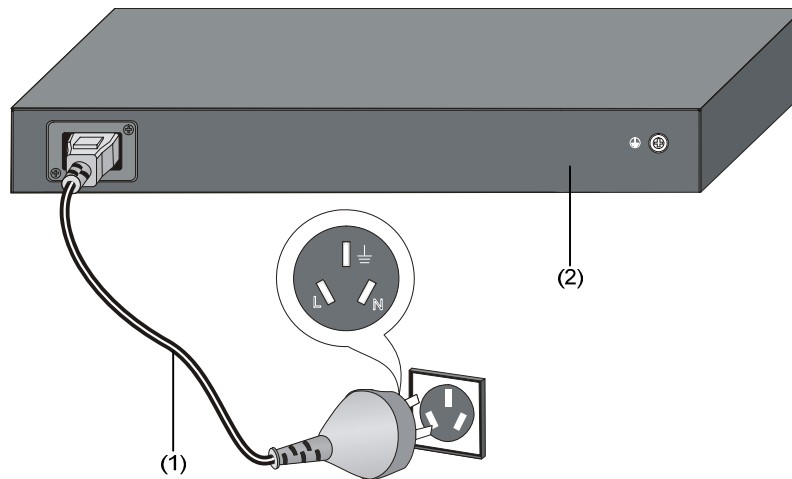
(1) Grounding screw	(2) PGND cable	(3) Earth
(4) Joint	(5) Grounding conductor	(6) Switch rear panel

In Other Installation Sites

When the switch is AC-powered

For an AC-powered switch, if neither of the above-mentioned two conditions is available, ground the switch through the PE wire of the AC power supply. Make sure the PE wire is well connected to the ground at the power distribution room or AC transformer side, the switch PE terminal and the PE wire are well connected, and the three-wire input cable of the PGND cable is used for the power supply cable. If the PE wire of the AC power supply is not grounded at the power distribution room or AC transformer side, report the problem and make reconstructions.

Figure 3-13 Ground through an AC power PE wire



(1) Three-wire AC power input cable

(2) Switch rear panel



Note

Use the PGND cable provided with the switch to connect the grounding strip in the equipment room. Otherwise, the grounding effect may not be ensured, which easily causes damage to the switch.

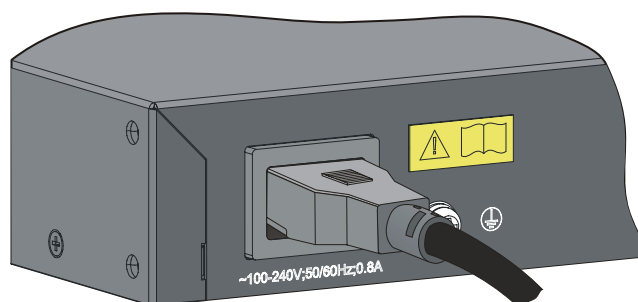
Connecting the Power Cord

Connecting an AC Power Cord

The 3Com Baseline Switch 2900 Family uses an external AC power system for its power supply. Follow these steps to connect an AC power cord:

- Step1** Connect one end of the supplied PGND cable to the grounding screw on the rear panel of the chassis and the other end to the ground as near as possible.
- Step2** Insert one end of the AC power cord to the AC power receptacle on the rear panel of the chassis, as shown in [Figure 3-14](#).
- Step3** Connect the other end of the power cord to a power source.
- Step4** Check whether the power LED on the front panel of the switch is ON. If the LED is ON, it shows the power cord is properly connected.

Figure 3-14 Connect the AC power cord





Caution

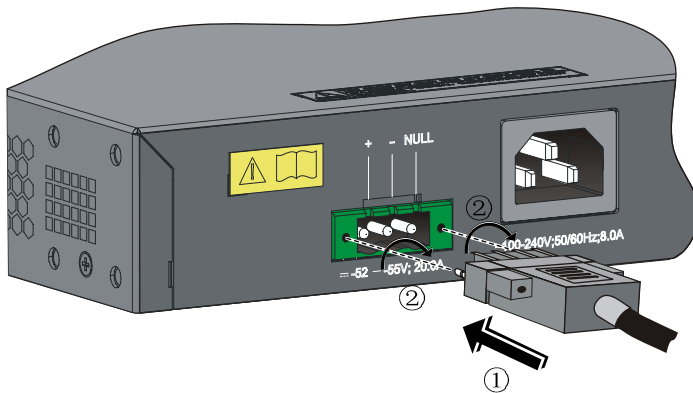
Make sure that the PGND cable has been properly connected before powering on the switch.

Connecting an RPS DC Power Cord

The 3Com Baseline Switch 2928-HPWR Plus also supports RPS DC power input with the input voltage ranging from –52 V to –55 V. Follow these steps to install a DC power cord:

- Step1** Connect one end of the supplied PGND cable to the grounding screw on the rear panel of the chassis and the other end to the ground as near as possible.
- Step2** Keep the upside of the DC RPS plug on top and plug it in the RPS DC receptacle (see callout 1 in [Figure 3-15](#)). (If you plug it with the upside down, the insertion is not smooth because of the specific structure design of the RPS DC receptacle and the RPS plug.)
- Step3** Use a flat-blade screwdriver to fix the two screws on the RPS plug clockwise to secure the plug to the RPS DC receptacle (see callout 2 in [Figure 3-15](#)).
- Step4** Connect the other end of the RPS DC power cord to the external RPS power supply system (–54 V/25 A output).
- Step5** Check whether the RPS LED on the front panel of the switch is ON. If the LED is ON, it shows the power cord is properly connected.

Figure 3-15 Connect an RPS DC power cord to the 3Com Baseline Switch 2928-HPWR Plus



Caution

- Make sure that the PGND cable has been properly connected before powering on the switch.
 - The length of the DC power cable must be less than 3 m (9.8 ft).
-

Verifying the Installation

Before powering on the switch, check that:

- There is enough space for heat dissipation around the switch, and the rack or workbench is stable.
- The PGND cable is connected.

- The selected power module matches that required by the switch.
- The power cables are properly connected.
- All the interface cables are cabled indoors. If there is any cable wired outdoors, verify that socket strip with lightning protection and lightning arresters for network ports have been properly connected.

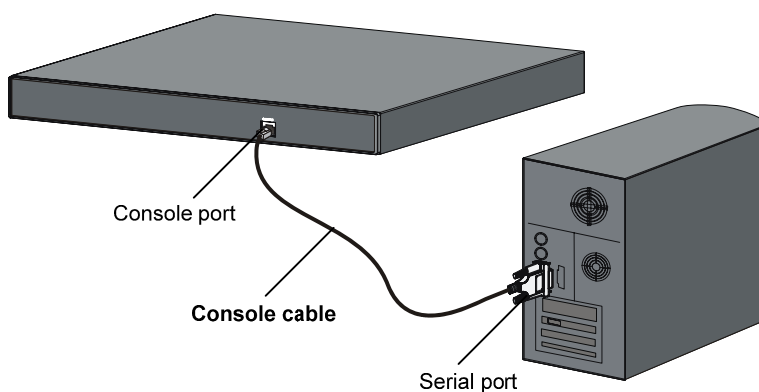
4 Initial Power-On

Setting Up the Configuration Environment

Set up the configuration environment as follows:

Connect a terminal (a PC in this example) to the console port on the switch with a console cable.

Figure 4-1 Network diagram for configuration environment setup



Connecting the Console Cable

Console Cable

A console cable is an 8-core shielded cable. One end of the cable is a crimped RJ-45 connector, which is connected to the console port of the switch, and the other end is a DB-9 female connector, which is connected to the serial port on the console terminal, as shown below.

Figure 4-2 Console cable

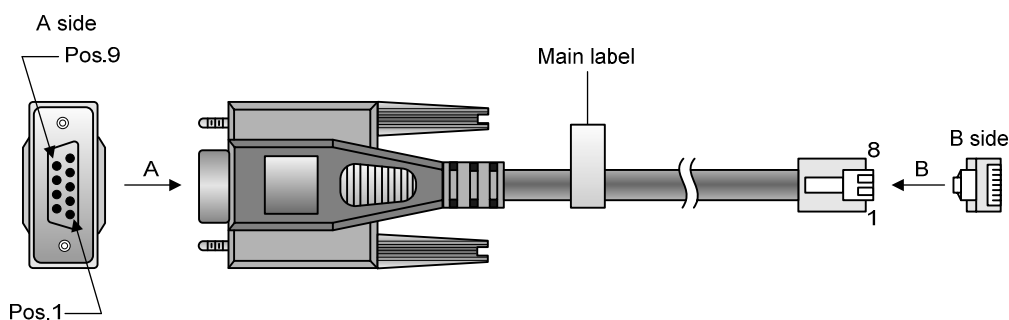


Table 4-1 Console cable pinouts

RJ-45	Signal	Direction	DB-9
1	RTS	←	7
2	DTR	←	4

RJ-45	Signal	Direction	DB-9
3	TXD	←	3
4	CD	→	1
5	GND	—	5
6	RXD	→	2
7	DSR	→	6
8	CTS	→	8

Connection Procedure

When you want to use the terminal to configure the switch, follow these steps to connect a terminal device to the switch using the console cable:

- 1) Plug the DB-9 female connector of the console cable to the serial port of the console terminal or PC.
- 2) Connect the RJ-45 connector of the console cable to the console port of the switch.



Caution

Pay attention to the mark on the console port and be sure to plug the connector to the correct port.



Note

- When connecting a PC to a powered-on switch, you are recommended to connect the DB-9 connector of the console cable to the PC before connecting the RJ-45 connector to the switch.
 - When disconnecting a PC from a powered-on switch, you are recommended to disconnect the DB-9 connector of the console cable from the PC after disconnecting the RJ-45 connector from the switch.
-

Setting Terminal Parameters

When setting up the configuration environment through the console port, the terminal or PC can use the terminal emulation program to communicate with the switch. You can run the HyperTerminal of the Windows operating system to connect to other PCs, network devices, and Telnet sites. For detailed information and the use of the HyperTerminal, refer to the HyperTerminal Help documentation in Help and Support Center on the PC running the Windows operating system.

In the following configuration procedure, Windows XP HyperTerminal is used to communicate with the switch.

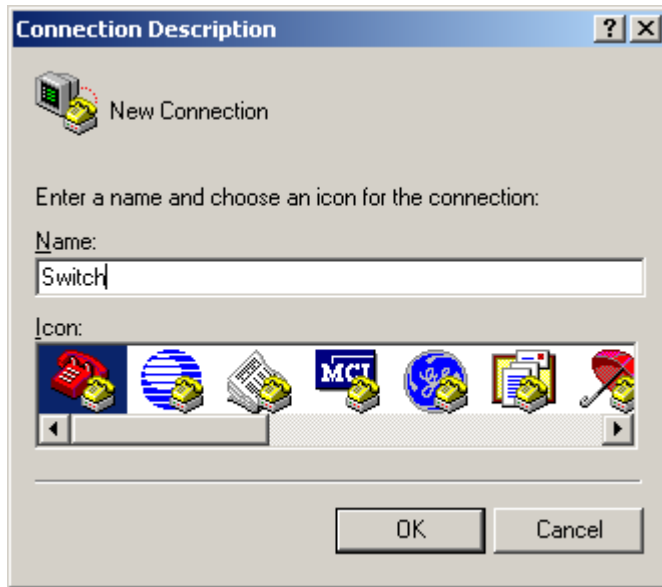
- 1) Start the PC and run the terminal emulation program.
- 2) Set terminal parameters as follows:
 - Bits per second: 38,400

- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None
- Emulation: VT100

The specific procedure is as follows:

Step1 Select **Start > Programs > Accessories > Communications > HyperTerminal** to enter the HyperTerminal window. The **Connection Description** dialog box appears, as shown below.

Figure 4-3 Connection description of the HyperTerminal



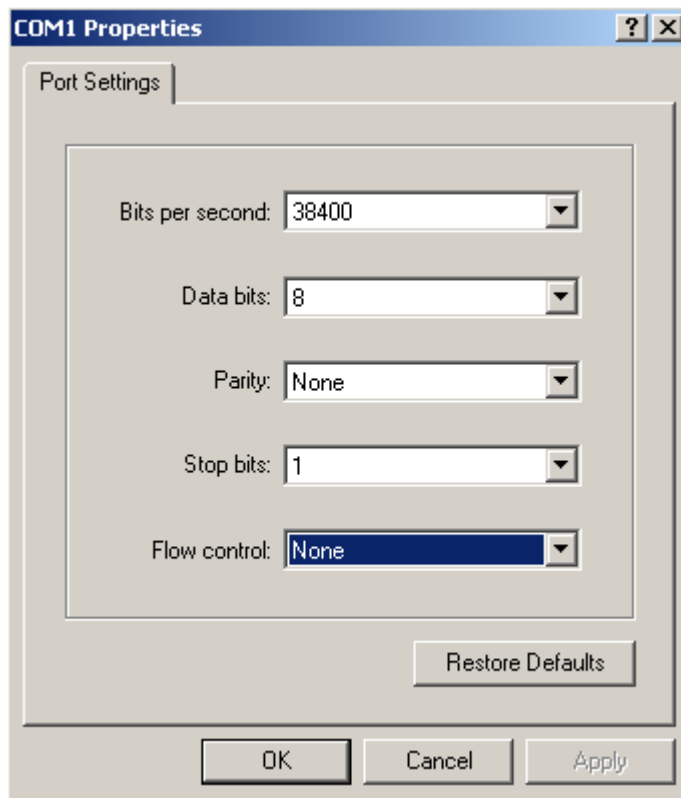
Step2 Type the name of the new connection in the **Name** text box and click **OK**. The following dialog box appears. Select the serial port to be used from the **Connect using** drop-down list.

Figure 4-4 Set the serial port used by the HyperTerminal connection



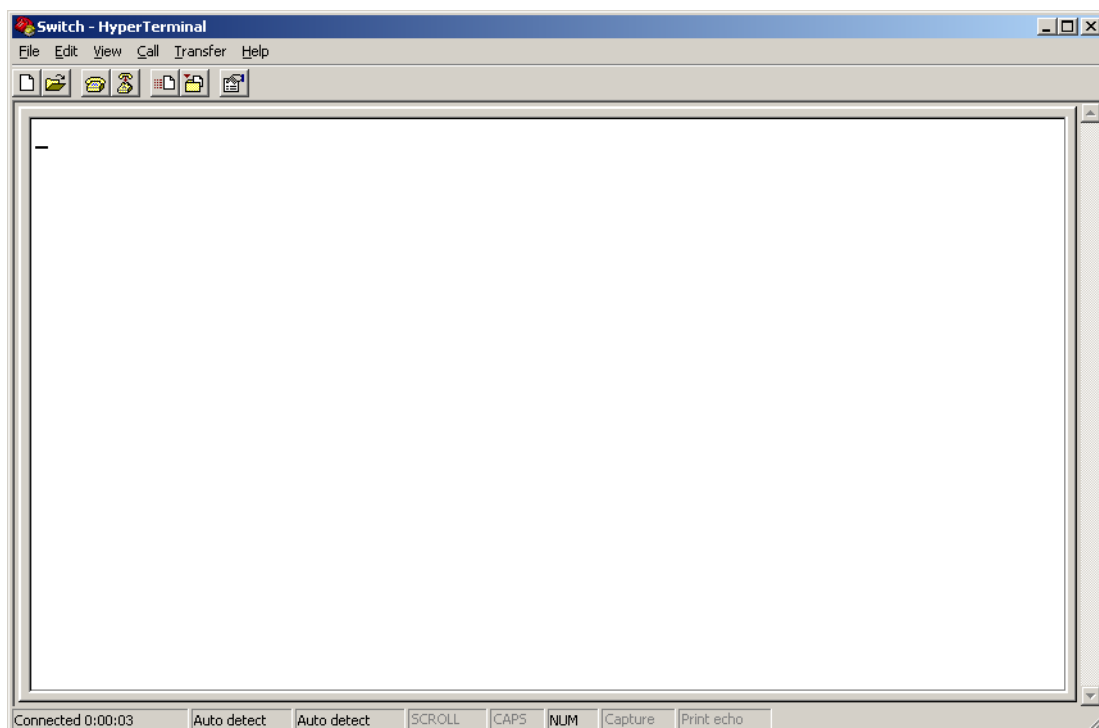
Step3 Click **OK** after selecting a serial port. The following dialog box appears. Set **Bits per second** to **38400**, **Data bits** to **8**, **Parity** to **None**, **Stop bits** to **1**, and **Flow control** to **None**.

Figure 4-5 Set the serial port parameters



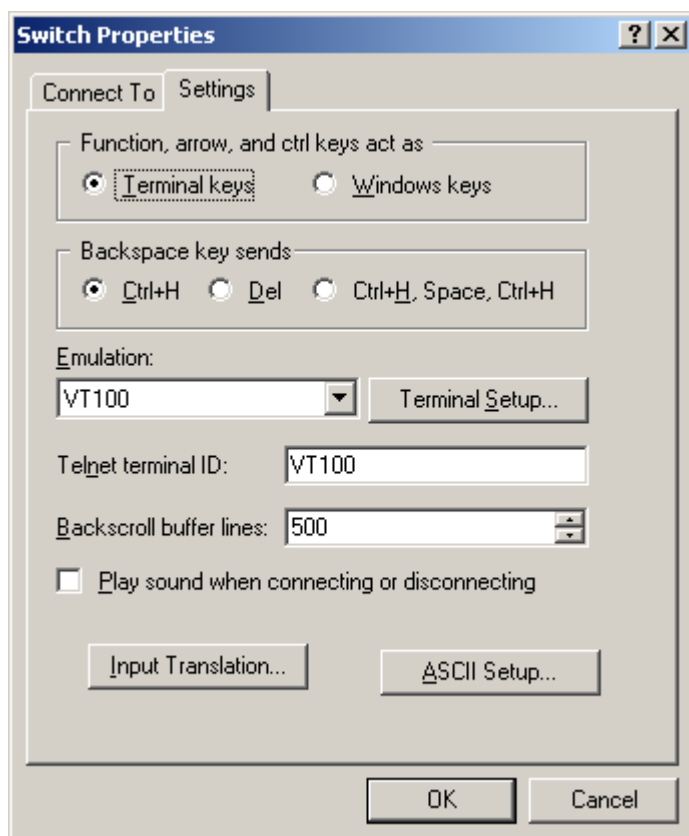
Step4 Click **OK** after setting the serial port parameters and the system enters the HyperTerminal window shown below.

Figure 4-6 HyperTerminal window



Step5 Click **Properties** in the HyperTerminal window to enter the **Switch Properties** dialog box. Click the **Settings** tab, set the emulation to **VT100**, and then click **OK**.

Figure 4-7 Set terminal emulation in **Switch Properties** dialog box



Booting the Switch

Checking Before Power-On

Before powering on the switch, verify that:

- The power cable is properly connected.
- The power supply voltage meets the requirement of the switch.
- The console cable is properly connected; the terminal or PC used for configuration has been started; and the configuration parameters have been set.

Powering On the Switch

The 3Com Baseline Switch 2900 Family have the same Boot ROM display style. This document uses the Boot ROM output information on the 3Com Baseline Switch 2928-SFP Plus as an example:

Starting.....

```
*****
*
*          3COM 2928-SFP Plus BOOTROM, Version 102
*
*****

Creation Date       : Jan  8 2009
CPU Type            : ARM926
CPU L1 Cache        : 32KB
```

```
CPU Clock Speed      : 333MHz
Memory Type          : DDR2 SDRAM
Memory Size          : 128MB
Flash Size           : 128MB
CPLD Version         : 001
PCB Version          : Ver.A
Mac Address          : 000ef2002900
```

Press Ctrl-B to enter Extended Boot menu...1

The last line asks whether you want to enter the Boot ROM menu. The system waits one second for your response.



Note

- The system has two startup modes: normal startup and fast startup. The normal startup mode requires a little longer time than the fast startup mode because of more self-test operations.
- By default, the system starts up in fast mode and the waiting time here is one second. If you set the startup mode to normal, the waiting time is five seconds. The following section describes the setting of the startup mode.

-
- If you press **Ctrl + B** within one second, the Boot ROM menu is displayed.

BOOT MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify BootRom password
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set BootRom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):

[Table 4-2](#) describes the fields above.

Table 4-2 Description on the fields

Item	Description
1. Download application file to flash	Download the application file to the flash memory
2. Select application file to boot	Select the application file to boot
3. Display all files in flash	Display all files in the flash memory
4. Delete file from flash	Delete files from the flash memory
5. Modify BootRom password	Modify the Boot ROM password

Item	Description
6. Enter BootRom upgrade menu	Enter the Boot ROM update menu
7. Skip current system configuration	Skip the current configuration file (this configuration is valid once)
8. Set BootRom password recovery	Restore the Boot ROM password
9. Set switch startup mode	Set the startup mode of the switch
0. Reboot	Restart the switch

- If you perform no operation or press a key other than **Ctrl + B** within one second, once the remaining waiting time becomes zero, the system begins to automatically start up and the following information is displayed:

```
Starting to get the main application file--flash:/S2900-CMW520-A1101.bin!.....
.....
The main application file is self-decompressing.....
.....
.....Done!
System is starting...
User interface aux0 is available.
```

Press ENTER to get started.

Press **Enter** and enter the correct username (**admin** by default) and password (no password by default). The following prompt is displayed:

```
<3Com Baseline Switch >
```

You can configure the switch now.

Changing the Boot Mode

By default, the system starts up in fast boot mode. If you want to change the boot mode to **normal**, press **Ctrl + B** within one second to enter the Boot ROM menu showed below:

```
BOOT MENU
```

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify BootRom password
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set BootRom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):

Enter **9**. The system prompts you to change the startup mode:

```
The current mode is fast startup mode!
```


Are you sure you want to change it to full startup mode? Yes or No (Y/N):

Enter **Y**. The system displays the following information:

Setting...Done!

BOOT MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify BootRom password
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set BootRom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):

Enter **0**. The system reboots in normal startup mode and displays the following information:

Starting.....

```
*****
*
*          3COM 2928-SFP Plus BOOTROM, Version 102
*
*****

Creation Date       : Jan  8 2009
CPU Type            : ARM926
CPU L1 Cache       : 32KB
CPU Clock Speed    : 333MHz
Memory Type        : DDR2 SDRAM
Memory Size        : 128MB
Flash Size         : 128MB
CPLD Version       : 001
PCB Version        : Ver.A
Mac Address        : 000ef2002900
```

Press Ctrl-B to enter Extended Boot menu...5

In normal startup mode, the waiting time here is five seconds. If you press **Ctrl + B** within five seconds, the Boot ROM menu is displayed. If you perform no operation or press a key other than **Ctrl + B** within five seconds, the system begins to automatically start up and the following information is displayed:

```
Starting to get the main application file--flash:/S2900-CMW520-A1101.bin!.....
.....
The main application file is self-decompressing.....
.....
.....Done!
System is starting...
```

```
Board checking.....LS51LTSR
SDRAM fast selftest.....OK!
Flash fast selftest.....OK!
```

```
CPLD selftest.....OK!
Switch chip selftest.....OK!
PHY selftest.....OK!
Please check leds.....FINISHED!
User interface aux0 is available.
```

Press ENTER to get started.

Press **Enter** and enter the correct username (**admin** by default) and password (no password by default).
The following prompt is displayed:

```
<3Com Baseline Switch >
```

You can configure the switch now.

5 Loading Software

Introduction

The 3Com Baseline Switch 2900 Family does not provide independent Boot ROM program but integrates it with the application program in host software package with the extension name of **.bin**.

- Loading application files: Download the host software package to the flash memory on the switch and set the attribute (**main**, **backup**, or **none**) of the application files.
- Upgrading the Boot ROM program: Use Boot ROM files in the host software package to upgrade the Boot ROM program of the switch.



Note

The entire Boot ROM program consists of the basic segment and extended segment.

- The basic segment is used for basic initialization of the system.
- The extended segment provides abundant human-computer interaction (HCI) functions and available network interfaces. It can be used to upgrade the applications and boot the system.

Boot ROM program (stored together with application programs in the host software package with an extension name of **.bin**) used for upgrade are complete Boot ROM program.

Approaches for Loading Application and Configuration Files

You can load application files through the Boot ROM menu, command line interface (CLI), and Web interface. For application upgrade through the CLI and Web interface, refer to the software upgrade section in the *3Com Baseline Switch 2900 Family User Guide*. Boot ROM upgrade through the Boot ROM menu is introduced in this manual.

Table 5-1 Approaches for loading application and configuration files of the switch

Approach	Section
Loading files through the Boot ROM menu	Loading Files Using XMODEM Through Console Port
	Loading Files Using TFTP Through Ethernet Port
	Loading Files Using FTP Through Ethernet Port

Loading Files Through the Boot ROM Menu

To load the Boot ROM and application files through the Boot ROM menu, you need to correctly connect a user terminal to the switch using a console cable.

Introduction to the Boot ROM Menu

Starting.....

```
*****
*
*          3COM 2928-SFP Plus BOOTROM, Version 102          *
*
*****

Creation Date       : Jan  8 2009
CPU Type            : ARM926
CPU L1 Cache        : 32KB
CPU Clock Speed     : 333MHz
Memory Type         : DDR2 SDRAM
Memory Size         : 128MB
Flash Size          : 128MB
CPLD Version        : 001
PCB Version         : Ver.A
Mac Address         : 000ef2002900
```

Press Ctrl-B to enter Extended Boot menu...1

When the system displays “Press Ctrl-B to enter Extended Boot menu”, press **Ctrl + B**. Then, the following prompt is displayed:

Please input BootRom password:



Note

- By default, the system starts up in fast mode and the waiting time here is one second. If you set the startup mode to normal, the waiting time is five seconds. For the setting of the startup mode, refer to [“Changing the Boot Mode”](#) on page 4-7.
 - To enter the Boot ROM menu in fast mode, you need to press **Ctrl + B** within one second when the system displays “Press Ctrl-B to enter Boot Menu”. Otherwise, the system starts decompressing the application files.
 - You need to restart the switch if you want to enter the Boot ROM menu after the application files are decompressed.
-

Enter the Boot ROM password (the initial password is null). Then the system displays the Boot ROM menu.

BOOT MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash

5. Modify BootRom password
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set BootRom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):

The items in the Boot ROM menu are described in [Table 4-2](#)



Note

- Currently, Boot ROM files are not provided separately by the 3Com Baseline Switch 2900 Family; instead, they are stored together with application files in the files with the name extension of **.bin**.
- The procedures for loading Boot ROM files and application files are similar except that you need to select different items (1 for loading application files, and 6 for loading Boot ROM files) in the Boot ROM menu. This manual takes the loading of Boot ROM files as examples.

Loading Files Using XMODEM Through Console Port

Introduction to XMODEM

XMODEM is a file transfer protocol widely used for its simplicity. XMODEM transfers files through the console port, supporting data packets of 128 bytes. With respect to reliability, it supports checksum, CRC, and the error packet retransmission mechanism. Normally, the maximum number of retransmission attempts is ten.

XMODEM transfer is completed by receiving and sending programs together. Receiving program initiates packet checking method negotiation by sending the negotiation character. If negotiation passes, the sending program starts packet transfer. Upon receipt of a complete packet, the receiving program checks it using the agreed-upon check method. If the check succeeds, the receiving program sends an acknowledgement character; if the check fails, it sends a reject character. Upon receipt of the acknowledgement, the sending program continues to send the next packet; upon receipt of the reject, it retransmits the packet.

Loading a Boot ROM file

Complete the following tasks to load a Boot ROM file using XMODEM through the console port (For details about the HyperTerminal, refer to “[Setting Terminal Parameters](#)” on page [4-2](#)):

Task	Remarks
Enter the Boot ROM update menu on the switch	Required Log in to the switch through the HyperTerminal and then configure the protocol used for loading files.
Enter the protocol parameter setting menu	
Configure the switch to download files using XMODEM	

Task	Remarks
Set the download rate of the console port on the switch	Required Log in to the switch through the HyperTerminal and then set the download rate of the console port on the switch.
Change the rate of the serial port on the terminal	Optional Set the baud rate of the serial port on the terminal to be consistent with that of the console port on the switch.
Establish a connection between the terminal and the switch using the changed rate	Optional
Uploading an application file from the terminal to the switch	Required Transmit a file from the terminal to the switch using the changed connection rate.
Updating the Boot ROM file on the switch	Required Update the Boot ROM file on the switch.
Restoring the download rate to the default	Optional Set the baud rate of the serial port on the terminal to be consistent with the default rate of the console port on the switch.
Restarting the switch to make the updated Boot ROM file effective	Required

1) Enter the Boot ROM update menu on the switch

Enter the Boot ROM menu, and then enter **6** or press **Ctrl + U** after the system displays “Enter your choice(0-9):” to enter the Boot ROM update menu.

```
Enter your choice(0-9): 6
```

1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

```
Enter your choice(0-3):
```

The items in the Boot ROM update menu are described in [Table 5-2](#).

Table 5-2 Description of the Boot ROM update menu

Item	Description
1. Update full BootRom	Update the complete Boot ROM file
2. Update extended BootRom	Update the extended Boot ROM section
3. Update basic BootRom	Update the basic Boot ROM section
0. Return to boot menu	Return to the Boot ROM menu

2) Enter the protocol parameter setting menu

After the system displays “Enter your choice(0-3):”, enter **1** to enter the protocol parameter setting menu.



Note

All the Boot ROM files to be loaded are complete Boot ROM files.

1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu

Enter your choice(0-3):

The items in the protocol parameter setting menu are described in [Table 5-3](#).

Table 5-3 Description of the protocol parameter setting menu

Item	Description
1. Set TFTP protocol parameter	Set TFTP parameters
2. Set FTP protocol parameter	Set FTP parameters
3. Set XMODEM protocol parameter	Set XMODEM parameters
0. Return to boot menu	Return to the Boot ROM menu

3) Configure the switch to download files using XMODEM

Enter **3** to enter the download rate setting menu.

Please select your download baudrate:

1. 9600
2. 19200
- 3.* 38400
4. 57600
5. 115200
0. Return to boot menu

Enter your choice(0-5):

4) Set the download rate of the console port on the switch

Select an appropriate download rate. For example, if you select 115200 bps, that is, enter **5**, the following information is displayed:

Download baudrate is 115200 bps

Please change the terminal's baudrate to 115200 bps and select XMODEM protocol

Press enter key when ready

Now that the console communication baud rate of the switch has been changed to 115200 bps while that of the terminal is still 38400 bps, the two sides cannot communicate with each other. According to the prompt, you need to change the baud rate of the terminal to 115200 bps.



Note

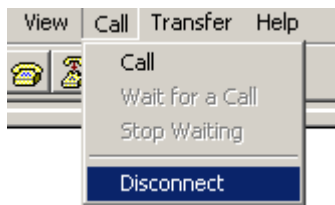
- Typically, the size of a **.bin** file is over 9 MB. Even at a baud rate of 115200 bps, the update takes tens of minutes.
 - If you select 38400 bps as the download rate, you can skip the step “[Change the rate of the serial port on the terminal.](#)”
-

5) Change the rate of the serial port on the terminal

To ensure communication between the terminal and the switch, the baud rate of the serial port on the terminal should be consistent with that of the console port on the switch.

Step1 Select **Call > Disconnect** in the HyperTerminal window to disconnect the terminal from the switch.

Figure 5-1 Disconnect the terminal from the switch



Step2 Select **File > Properties**. In the **Properties** dialog box, click **Configure** (as shown in [Figure 5-2](#)), and then select **115200** from the **Bits per second** drop-down list box (as shown in [Figure 5-3](#)).

Figure 5-2 Properties dialog box

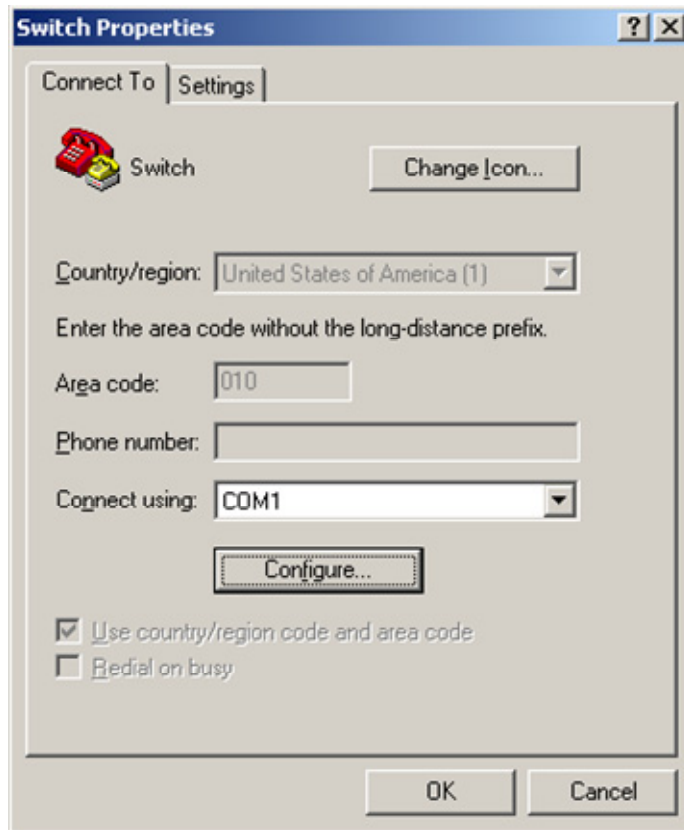
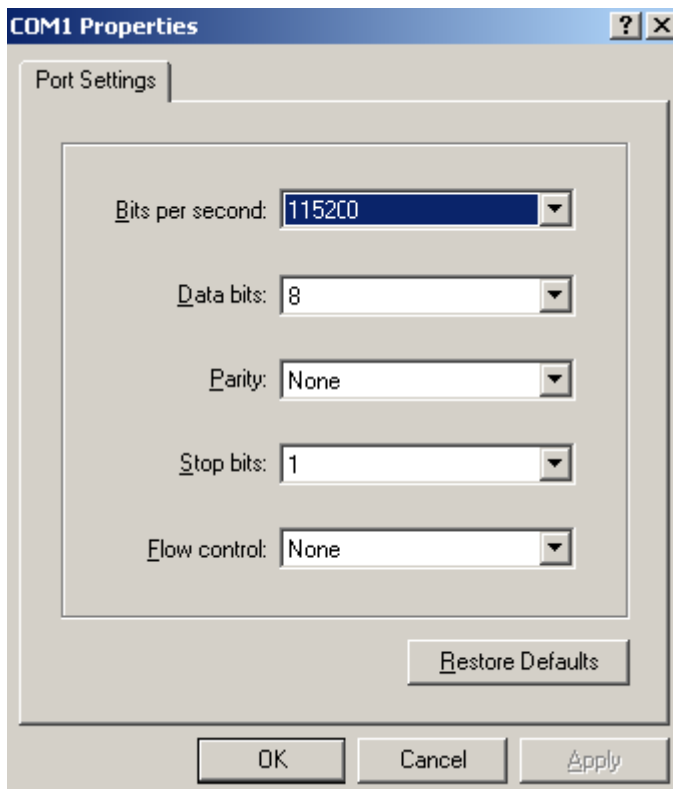
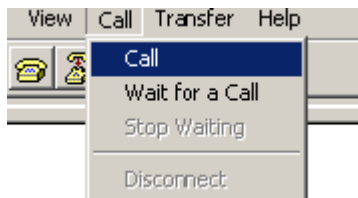


Figure 5-3 Modify the baud rate



Step3 Select **Call** > **Call** to reestablish the connection.

Figure 5-4 Reestablish the connection



Note

The new settings can take effect only after you reestablish the connection.

6) Establish a connection between the terminal and the switch using the changed rate

Press **Enter** to reestablish the connection between the terminal and the switch and download the application file at 115200 bps. The following information is displayed:

```
Now please start transfer file with XMODEM protocol
If you want to exit, Press <Ctrl+X>
Loading ...CCCCCCCCCCCCC
```



Note

Press **Ctrl + X** to quit downloading files; otherwise, proceed as follows.

7) Uploading an application file from the terminal to the switch

Step1 Select **Transfer > Send File** in the HyperTerminal window (as shown in [Figure 5-5](#)). Click **Browse** in the pop-up dialog box (as shown in [Figure 5-6](#)) to select the application file to be downloaded (for example, **update.bin**), and select **Xmodem** from the **Protocol** drop-down list.

Figure 5-5 Transfer menu

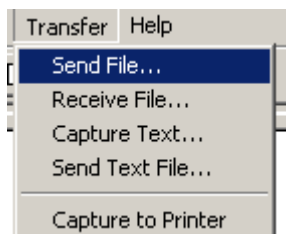
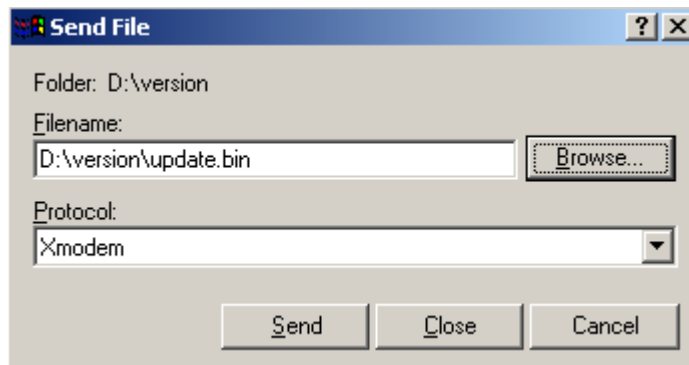
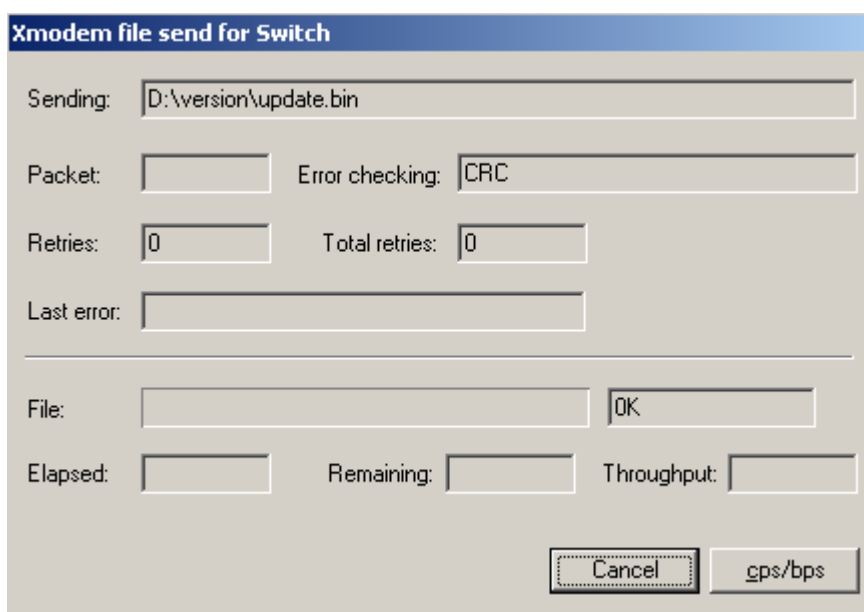


Figure 5-6 File transmission dialog box



Step2 Click **Send**. The following dialog box appears:

Figure 5-7 Send the application file using XMODEM



8) Updating the Boot ROM file on the switch

After the Boot ROM file is downloaded, the terminal displays the following information:

```
Loading ...CCCC Done!  
Will you Update Basic BootRom? (Y/N):Y
```

The system asks you whether you want to update the basic Boot ROM section. Click **Y** and then the system displays the following information after the update is completed.

```
Updating Basic BootRom.....Done!  
Updating extended BootRom? (Y/N):Y
```

The system asks you whether you want to update the extended Boot ROM section. Click **Y**. Then the system displays the following information after the update is completed:

```
Updating extended BootRom.....Done!  
Please change the terminal's baudrate to 38400 bps, press ENTER when ready.
```

9) Restoring the download rate to the default

Set the baud rate to 38400 bps (refer to “[Change the rate of the serial port on the terminal](#)” on page [5-6](#) for detailed operation).



Note

If you select 38400 bps as the download rate, skip this step, that is, you do not need to modify the baud rate of the HyperTerminal.

10) Restarting the switch to make the updated Boot ROM file effective

Press any key to return to the Boot ROM update menu.

- 1. Update full BootRom
- 2. Update extended BootRom
- 3. Update basic BootRom
- 0. Return to boot menu

Enter your choice(0-3):

Enter **0** to return to the Boot ROM menu, and then enter **0** again. After that, the device is restarted and the updated Boot ROM file becomes effective.

11) Loading an application file

To load the application file of the switch, enter **1** in the Boot ROM menu. The system displays the following information:

- 1. Set TFTP protocol parameter
- 2. Set FTP protocol parameter
- 3. Set XMODEM protocol parameter
- 0. Return to boot menu

Enter your choice(0-3):3

Enter **3** to upload an application file using XMODEM.

The procedure of loading an application file is similar to that of loading a Boot ROM file. The difference lies in that you need to name the Load File name to write the application program to the flash memory and specify the application file attribute after loading

```
Load File name : default_file update.bin
Free space: 70885376 bytes
Writing flash.....
.....Done!
Please input the file attribute (Main/Backup/None) M
Done!
```



Note

If an application file with a specific attribute already exists when you set a new file with the attribute, the attribute of the existing file becomes **none** after the new file becomes effective.

Loading Files Using TFTP Through Ethernet Port

Introduction to TFTP

Trivial File Transfer Protocol (TFTP) is a TCP/IP protocol used for file transfer between client and server. It provides a simple and low-overhead file transfer service. TFTP provides unreliable data transfer over UDP.

Loading a Boot ROM file

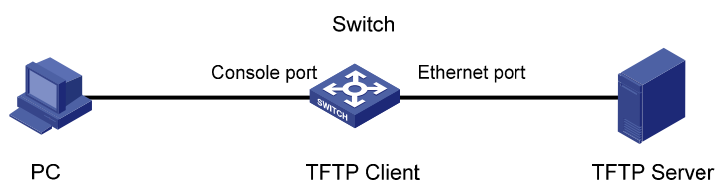
Complete the following tasks to load a Boot ROM file using TFTP through an Ethernet port (For details about the HyperTerminal, refer to “[Setting Terminal Parameters](#)” on page 4-2):

Task	Remarks
Set up the configuration environment	Required Connect the switch to the TFTP server through an Ethernet port, and to a PC through the console port. The PC and the TFTP server can be the same device.
Run the TFTP Server program on the sever	Required
Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu. Then enter the protocol parameter setting menu.	Required Log in to the switch through the HyperTerminal and configure the protocol for uploading the Boot ROM file.
Enter the protocol parameter setting menu	
Configure the switch to upload the Boot ROM file through TFTP	
Update the Boot ROM file on the switch	Required Update the Boot ROM file on the switch.
Restart the switch to make the updated Boot ROM file effective	Required Restart the switch to make the updated Boot ROM file effective.

1) Set up the configuration environment

Connect an Ethernet port of the switch to the server (whose IP address is available) that provides the file (usually the .bin file) to be downloaded, and connect the console port of the switch to a PC, as shown in [Figure 5-8](#).

Figure 5-8 Load applications using TFTP through Ethernet port





Caution

The PC and the TFTP server can be the same device.

2) Run the TFTP Server program on the sever

Run TFTP Server on the server connected with the switch's Ethernet port, and specify the path of the application file to be downloaded.

3) Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu. Then enter the protocol parameter setting menu.

If you want to load the Boot ROM file, enter **6** in the Boot ROM menu after the system displays "Enter your choice(0-9):" to enter the Boot ROM update menu.

- 1. Update full BootRom
- 2. Update extended BootRom
- 3. Update basic BootRom
- 0. Return to boot menu

Enter your choice(0-3):

4) Enter the protocol parameter setting menu

Enter **1** to update the complete Boot ROM file, and then enter the protocol parameter setting menu.

Bootrom update menu:

- 1. Set TFTP protocol parameter
- 2. Set FTP protocol parameter
- 3. Set XMODEM protocol parameter
- 0. Return to boot menu

Enter your choice(0-3):

5) Configure the switch to upload the Boot ROM file through TFTP

Enter **1** to update the Boot ROM file using TFTP, and then set the TFTP parameters.

Load File Name :update.bin
Server IP Address :10.10.10.2
Local IP Address :10.10.10.3
Gateway IP Address :

The parameters are described in [Table 5-4](#).

Table 5-4 Description of the TFTP parameters

Item	Description
Load File Name :	Name of the file to be downloaded (for example, update.bin)
Server IP Address :	IP address of server (for example, 10.10.10.2)
Local IP Address :	IP address of the switch (for example, 10.10.10.3)
Gateway IP Address :	IP address of the gateway (suppose it is not specified)



Note

- Enter the file name and IP addresses based on the actual condition.
 - If the switch and the server are on the same network segment, you can specify any unused IP address of the network for the switch without specifying the gateway's IP address; if they are not on the same segment, you need to specify the gateway's IP address so that the switch can communicate with the server.
-

6) Update the Boot ROM file on the switch

Enter the corresponding parameters based on the actual condition. The system displays the following information:

```
Loading.....
.....
.....Done!
Will you Update Basic BootRom? (Y/N):Y
```

The system asks you whether you want to update the basic Boot ROM section. Click **Y**. Then the system displays the following information after the update is complete:

```
Updating Basic BootRom.....Done!
Updating extended BootRom? (Y/N):Y
```

The system asks you whether you want to update the extended Boot ROM section. Click **Y**. Then the system displays the following information after the update is complete:

```
Updating extended BootRom.....Done!
```

7) Restart the switch to make the updated Boot ROM file effective

Press any key to return to the Boot ROM update menu.

```
Press enter key when ready
1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu
Enter your choice(0-3):
```

Enter **0** to return to the Boot ROM menu, and then enter **0** again. After that, the device is restarted and the updated Boot ROM file becomes effective.

Loading an application file

To load an application file of the switch, enter **1** in the Boot ROM menu. The system displays the following information:

```
1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu
Enter your choice(0-3):3
```

You can enter **1** to load the application file.

The procedure of loading an application file is similar to that of loading a Boot ROM file. The difference lies in that the system displays the prompt of loading the application file rather than the Boot ROM file. After loading the application file, the switch displays that you should configure the application attribute, that is, **main**, **backup**, or **none**. Type a specific attribute to complete loading the application file.

```
Writing flash.....
.....Done!
Please input the file attribute (Main/Backup/None) M
Done!
```



Note

If an application file with a specific attribute already exists when you set a new file with the attribute, the attribute of the existing file becomes **none** after the new file becomes effective.

Loading Files Using FTP Through Ethernet Port

Introduction to FTP

The switch can serve as an FTP client by using its Ethernet port to download the system application and configuration files.

Loading a Boot ROM file

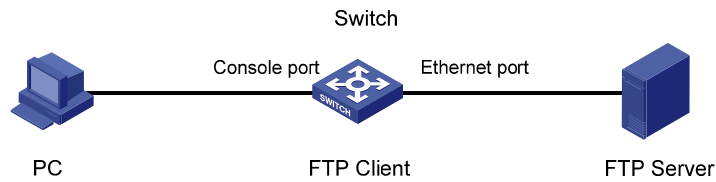
Complete the following tasks to load a Boot ROM file using FTP through an Ethernet port (For details about the HyperTerminal, refer to “[Setting Terminal Parameters](#)” on page 4-2):

Task	Remarks
Set up the configuration environment	Required Connect the switch to the TFTP server through an Ethernet port, and to a PC through the console port. The PC and the TFTP server can be the same device.
Run the FTP Server program on the server	Required
Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu, and then enter the protocol parameter setting menu.	Required Log in to the switch through the HyperTerminal and configure the protocol for uploading the Boot ROM file.
Enter the protocol parameter setting menu	
Configure the switch to load the Boot ROM file through FTP	
Update the Boot ROM file on the switch	Required Update the Boot ROM file on the switch.
Restart the switch to make the updated Boot ROM file effective	Required Restart the switch to make the updated Boot ROM file effective.

1) Set up the configuration environment

Connect an Ethernet port of the switch to the server (whose IP address is available) that provides the file (usually the **.bin** file) to be downloaded, and connect the console port of the switch to a PC, as shown in [Figure 5-9](#).

Figure 5-9 Load applications using FTP through Ethernet port



2) Run the FTP Server program on the server

Run FTP Server on the server connected with the switch's Ethernet port, configure the FTP username and password, and specify the path of the application file to be downloaded.

3) Run the terminal emulation program on the PC connected with the switch's console port. Start the switch and enter the Boot ROM menu, and then enter the protocol parameter setting menu.

If you want to load the Boot ROM file, enter **6** in the Boot ROM menu after the system displays "Enter your choice(0-9):" to enter the Boot ROM update menu.

- 1. Update full BootRom
- 2. Update extended BootRom
- 3. Update basic BootRom
- 0. Return to boot menu

Enter your choice(0-3):

4) Enter the protocol parameter setting menu

Enter **1** to update the complete Boot ROM file.

Bootrom update menu:

- 1. Set TFTP protocol parameter
- 2. Set FTP protocol parameter
- 3. Set XMODEM protocol parameter
- 0. Return to boot menu

Enter your choice(0-3):

5) Configure the switch to load the Boot ROM file through FTP

In the protocol parameter setting menu, enter **2** to update the Boot ROM file using FTP, and then set the FTP parameters.

```
Load File Name      :update.bin
Server IP Address   :10.10.10.2
Local IP Address    :10.10.10.3
Gateway IP Address  :0.0.0.0
FTP User Name       :2900
FTP User Password   :123
```

The parameters are described in [Table 5-5](#).

Table 5-5 Description of the FTP parameters

Item	Description
Load File Name :	Name of the file to be downloaded
Server IP Address :	IP address of the PC
Local IP Address :	IP address of the switch
Gateway IP Address :	IP address of the gateway
FTP User Name	Username for logging in to the FTP server, which should be consistent with that configured on the FTP server.
FTP User Password	Password for logging in to the FTP server, which should be consistent with that configured on the FTP server.

**Note**

- Enter the file name and IP addresses based on the actual condition.
- If the switch and the server are on the same network segment, you can specify any unused IP address of the network for the switch without specifying the gateway's IP address; if they are not on the same segment, you need to specify the gateway's IP address so that the switch can communicate with the server.

6) Update the Boot ROM file on the switch

Enter the corresponding parameters based on the actual condition. The system displays the following information:

```
Will you Update Basic BootRom? (Y/N):Y
```

The system asks you whether you want to update the basic Boot ROM section. Click **Y**. The system displays the following information after the update is complete:

```
Updating Basic BootRom.....Done!
```

```
Updating extended BootRom? (Y/N):Y
```

The system asks you whether you want to update the extended Boot ROM section. Click **Y** and then the system displays the following information after the update is complete:

```
Updating extended BootRom.....Done!
```

7) Restart the switch to make the updated Boot ROM file effective

Press any key to return to the Boot ROM update menu.

```
Press enter key when ready
```

1. Update full BootRom
2. Update extended BootRom
3. Update basic BootRom
0. Return to boot menu

```
Enter your choice(0-3):
```

Enter **0** to return to the Boot ROM menu, and then enter **0** again. After that, the device is restarted and the updated Boot ROM file becomes effective.

Loading an application file

To load an application file of the switch, enter **1** in the Boot ROM menu. The system displays the following information:

1. Set TFTP protocol parameter
2. Set FTP protocol parameter
3. Set XMODEM protocol parameter
0. Return to boot menu

Enter your choice(0-3):3

You can enter **2** to load the application file.

The procedure of loading an application file is similar to that of loading a Boot ROM file. The difference lies in that the system displays the prompt of loading the application file rather than the Boot ROM file.

After loading the application file, the switch displays that you should configure the application attribute, that is, **main**, **backup**, or **none**. Type a specific attribute to complete loading the application file.

```
Writing flash.....  
.....Done!  
Please input the file attribute (Main/Backup/None) M  
Done!
```



Note

If an application file with a specific attribute already exists when you set a new file with the attribute, the attribute of the existing file becomes **none** after the new file becomes effective.

6 Maintenance and Troubleshooting

File Loading Failure

If file loading fails, the system runs steadily using the original system files. In this case, check whether the physical ports are properly connected.

- If not, reconnect them correctly and restart the loading procedure.
- If so, view the loading procedure information displayed on the HyperTerminal to check for input errors. If there is any input error, restart the loading procedure with correct input.

Common input errors include:

- Fail to set the baud rate of the HyperTerminal to 38,400 bps when loading files at a baud rate other than 9,600 bps through XMODEM.
- Enter an incorrect IP address, software name, or path of the TFTP server when using TFTP.
- Enter an incorrect IP address, software name, username, or password when using FTP.

If file loading fails when there are neither physical connection problems nor input errors, please contact your sales agent for help.

Password Loss

User Password Loss

If you have forgotten the user password, you can enter the Boot ROM menu:

```
BOOT MENU
1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify BootRom password
6. Enter BootRom upgrade menu
7. Skip current system configuration
8. Set BootRom password recovery
9. Set switch startup mode
0. Reboot
```

Enter your choice(0-9):

Enter **7**, and then restart the switch. After the switch is restarted, the user password is removed.

Boot ROM Password Loss

Please contact your sales agent.

Power Supply Failure

The 3Com Baseline Switch 2928-HPWR Plus adopts AC power input, RPS power input, or both RPS and AC power inputs. Other 3Com Baseline Switch 2900 Family adopt AC power input only.

You can determine whether the power system of a switch functions normally by viewing the power LED or RPS power LED on the front panel.

With AC power input

When AC power input is used for power supply of a switch, you can check the power LED. The power LED stays on when power system is normal. Otherwise, please check whether:

- The power cord is correctly connected, the power receptacle on the switch and the AC power socket function normally.
- The power input to the switch is normal.
- The operating temperature of the switch is in the appropriate range and good ventilation is ensured for the power supply unit. PoE switches support over-temperature protection, allowing the internal power module to enter the protection state if the temperature is too high and then restore power supply after the temperature becomes normal.

With RPS power input

When RPS power input is adopted, you can check the power LED or RPS power LED to judge the status of the power system. Both LEDs stay on when the power system functions normally. Otherwise, please check whether:

- The RPS DC power cord is correctly connected.
- The RPS power supply is normal.
- The operating temperature of the switch is in the appropriate range and good ventilation is ensured for the power supply unit. PoE switches support over-temperature protection, allowing the internal power module to enter the protection state if the temperature is too high and restore power supply after the temperature becomes normal.

With both AC and RPS power supplies

When both the AC and RPS power supplies are adopted, you can check the power LED and the RPS power LED to determine the status of each power input.

1) The power LED is off.

In this case, both the AC and RPS power inputs are abnormal. Please check that:

- The power cord is correctly connected, the power receptacle on the switch and the AC power socket function normally.
- The AC power input to the switch is normal.
- The RPS DC power cord is correctly connected and the RPS power supply is normal.
- The operating temperature of the switch is in the appropriate range and a good ventilation is ensured for the power supply unit. PoE switches support over-temperature protection, allowing the internal power module to enter the protection state if the temperature is too high and then restore power supply after the temperature becomes normal.

2) The power LED is on while the RPS LED is off.

The RPS power input is abnormal, please check that:

- The RPS DC power cord is correctly connected.

- The RPS power input is normal.



Note

If the cause cannot be located in the preceding steps and the problem persists, contact your local sales agent or service engineer.

Configuration Terminal Failure

After the switch is powered on and the system is normal, the booting information will be displayed on the configuration terminal. If the configuration system has any faults, there will not be any screen display at the configuration terminal or the displayed characters will be totally illegible.

Troubleshooting when there is no terminal display

If there is no output information after the configuration is powered on, please check whether:

- The power supply is normal
- The console cable is properly connected

If no problems are found after the above-mentioned items have been checked, the cause may lie in the console cable or the settings of the terminal (such as HyperTerminal) parameters. Please perform the corresponding check.

Troubleshooting when the terminal display is illegible

If there is illegible display at the configuration terminal, the cause might lie in the parameter setting error at the terminal (such as HyperTerminal). Verify the following terminal parameter (such as hyper terminal) settings:

- Baud rate: 38,400
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none
- Emulation: VT100.